ZX USER

No 5

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An Argus Specialist Publication

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Welcome to the fifth issue of ZX User. This is your bonus extra for all Spectrum owner — an additional 16-page supplement devoted entirely to the Spectrum.

We're interested in your points of view. Send your comments and observations to us — and don't forget your listings and tips.

This week you'll find a game featuring a miserly vicar whose lust for gold takes him in search of gold bars.

There's also a space game in which you face force fields, asteroids and aliens and a listing for both ZX81 and Spectrum to help you get your maths in shape.

We hope you enjoy this week's issue. Happy reading!

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WE WELCOME programs and articles from our readers. If you feel that your work meets our standards, please submit it to us for consideration for publication.

Programs must always be sent on cassette. Listings are helpful, but not necessary. Check carefully that they are bug-free. Include full details of what your program does, how it works, variables you have used and hints on conversion. See the programs in this issue for guidance on what your paperwork should include.

Articles on using the Spectrum and the ZX81 should be no longer than 2,000 words. Those most likely to be published will help our readers make better use of their computers by giving useful advice, possibly with programming examples, tables and so on. Short hints are also welcome.

All submissions will be acknowledged and the copyright in such works which will pass to Argus Specialist Publications Ltd will be paid for at competitive rates.

Keep a copy of your work and include and SAE. Label everything clearly and give a daytime and home phone number if you can. All work for consideration should be sent to:

Paul Liptrot, ZX User, No. 1 Golden Square, London W1R 3AB

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The Mean, Miserly Man of God

Here's a novel game for you. In this game you are George the vicar. Your mission is to collect five gold bars (the love of money is the root of all evil, George, so beware!) from any one of 30 rooms.

Your behaviour is obviously not being condoned by the Almighty, as you have 10 different hostile beings to cope with. Each appears three times, so you should really learn your lesson and go back to tending your flock.

If the aliens trap you three times, the game is over and a rendition of Chitty Chitty Bang Bang (how appropriate?) is played while you decide whether you want to take up the challenge again.

If you complete your task, a congratulatory message appears on screen accompanied by machine code sound. You will also hear machine code sound when you pass away and move on to pastures new, and when you find an object.

The routine in the program is not used to its full extent and some great sound effects can be found by POKEing the two values shown in the program.

This game runs on both the 16 and 48K Spectrum. To help you find your way through the listing there are numerous REM statements describing the function of each routine. The listing will only run on the 16K Spectrum if all REM lines are omitted.

On screen you will see the outline of a room with doors, which are the exits. You will also see a randomly moving alien, your character and possibly a gold bar. Pick up

Here's a great original game for you — you'll love this one. You're the Vicar with the lust for gold. Track down those nuggets in this top quality game from Andrew Sanders

the gold bars by walking into them.

These are your controls: **Q** up, **A** down, **O** left, **P** right.

Well, Vicar, you're straying from the straight and narrow, and you know it will only lead to destruction — but good luck, anyway!

Variables

a$() data for exits from each room
room which room you are in (1 to 30)
v() tell computer which rooms should have a gold bar in them
x,y co-ordinates of character
a,b co-ordinates of enemy
r() number of data line for each alien
a(), c() musical notes

How it works

20-590 movement of man and alien routines
600-620 sounds at death
700-730 when a bar has been collected, delete from array v()
1000-1200 construct room
8000-8225 data for various aliens
9000-9050 define UDGs
9100-9190 maze data, tune data, restore line data
9200-9290 initialise, call other routines, set locations of bars
9300-9340 updata lives
9400-9450 routine after dying
9500-9540 machine code sound routine
9600-9640 routine when game is complete

```
  0>REM Program by Sanders and Charnock1984
  2 REM lines 20 to 390 are character movement routines
  5 GO SUB 9200
 15 PRINT  INK ink;AT a,b;"TU"
 20 PRINT  INK 7; BRIGHT 1;AT x,y;"I";AT x+1,y;"J"
 25 LET z$=INKEY$
 28 IF z$="" THEN  GO TO 500
 30 IF z$="O" THEN  GO TO 200
 40 IF z$="A" THEN  GO TO 250
 50 IF z$="Q" THEN  GO TO 300
 60 IF z$="P" THEN  GO TO 350
 70 GO TO 20
200 IF ATTR (x,y-1)=7 AND ATTR (x+1,y-1)=7 THEN  LET y=y-1: GO SUB 400: GO TO 5
00
210 IF y=3 THEN  LET x=10: LET y=28: LET room=room-1: BEEP .01,0: GO SUB 1000:
LET k=1: GO TO 500
212 IF ATTR (x,y-1)=ink OR ATTR (x+1,y-1)=ink  THEN  GO SUB 600: CLS : GO TO 93
00
215 IF ATTR (x,y-1)=6 OR ATTR (x+1,y-1)=6 THEN  LET obj=obj+1: GO SUB 700: LET
y=y-1: GO SUB 400: GO TO 500
230 GO TO 500
250 IF ATTR (x+2,y)=7 THEN  LET x=x+1: GO SUB 420: GO TO 500
260 IF x=18 THEN  LET x=2: LET y=15: LET room=room+6: BEEP .01,0: GO SUB 1000:
LET k=1: GO TO 500
262 IF ATTR (x+2,y)=ink THEN  GO SUB 600: CLS : GO TO 9300
265 IF ATTR (x+2,y)=6 THEN  LET obj=obj+1: GO SUB 700: LET x=x+1: GO SUB 420: G
O TO 500
280 GO TO 500
300 IF ATTR (x-1,y)=7 THEN  LET x=x-1: GO SUB 440: GO TO 500
310 IF x=2 THEN  LET x=18: LET y=15: LET room=room-6: BEEP .01,0: GO SUB 1000:
LET k=1: GO TO 500
312 IF ATTR (x-1,y)=ink THEN  GO SUB 600: CLS : GO TO 9300
315 IF ATTR (x-1,y)=6 THEN  LET obj=obj+1: LET x=x-1: GO SUB 700: GO SUB 440: G
O TO 500
340 GO TO 500
350 IF ATTR (x,y+1)=7 AND ATTR (x+1,y+1)=7 THEN  LET y=y+1: GO SUB 460: GO TO 5
00
360 IF y=28 THEN  LET x=10: LET y=3: LET room=room+1: BEEP .01,0: GO SUB 1000:
LET k=1: GO TO 500
362 IF ATTR (x,y+1)=ink OR ATTR (x+1,y+1)=ink THEN  GO SUB 600: CLS : GO TO 930
0
365 IF ATTR (x,y+1)=6 OR ATTR (x+1,y+1)=6 THEN  LET obj=obj+1: LET y=y+1: GO SU
B 700: GO SUB 460: GO TO 500
390 GO TO 500
400 REM delete man routines
405 PRINT  INK 7; BRIGHT 1;AT x,y;"I"; INK 7; BRIGHT 0;AT x,y+1;" "; INK 7; BR
I
GHT 1;AT x+1,y;"J"; INK 7; BRIGHT 0;AT x+1,y+1;" ": GO TO 500
410 RETURN
```

```
 420 PRINT  INK 7; BRIGHT 0;AT x-1,y;" "; INK 7; BRIGHT 1;AT x,y;"▒";AT x+1,y;"
": BRIGHT 0
 430 RETURN
 440 PRINT  INK 7; BRIGHT 0;AT x+2,y;" "; INK 7; BRIGHT 1;AT x+1,y;"▒";AT x,y;"
": BRIGHT 0
 450 RETURN
 460 PRINT  INK 7; BRIGHT 0;AT x,y-1;" "; INK 7; BRIGHT 1;AT x,y;"▒"; INK 7; BR
I
GHT 0;AT x+1,y-1;" "; INK 7; BRIGHT 1;AT x+1,y;"▒": BRIGHT 0
 470 RETURN
 500 REM alien movement
 505 LET ti=ti+1
 510 FOR r=1 TO 2
 520 LET v=INT (RND*4)+1
 522 IF v=1 AND ATTR (a-1,b)=7 AND ATTR (a-1,b+1)=7 THEN  LET a=a-1: PRINT  INK
7;AT a+1,b;"  "; INK ink;AT a,b;"▒▒": NEXT r
 525 IF v=1 AND ATTR (a-1,b)=71 OR ATTR (a-1,b+1)=71 THEN  GO SUB 600: CLS : GO
TO 9300
 533 IF v=2 AND ATTR (a+1,b)=7 AND ATTR (a+1,b+1)=7 THEN  LET a=a+1: PRINT  INK
7;AT a-1,b;"  "; INK ink;AT a,b;"▒▒": NEXT r
 535 IF v=2 AND ATTR (a+1,b)=71 OR ATTR (a+1,b+1)=71 THEN  GO SUB 600: CLS : GO
TO 9300
 544 IF v=3 AND ATTR (a,b+2)=7 THEN  LET b=b+1: PRINT  INK 7;AT a,b-1;"  "; INK
ink;AT a,b;"▒▒": NEXT r
 545 IF v=3 AND ATTR (a,b+2)=71 THEN  GO SUB 600: CLS : GO TO 9300
 552 IF v=4 AND ATTR (a,b-1)=7 THEN  LET b=b-1: PRINT  INK 7;AT a,b+1;"  "; INK
ink;AT a,b;"▒▒": NEXT r
 555 IF v=4 AND ATTR (a,b-1)=71 THEN  GO SUB 600: CLS : GO TO 9300
 570 NEXT r
 580 IF k=1 THEN  LET k=0: GO TO 20
 590 GO TO 25
 600 REM death sound
 610 POKE 42501,1: POKE 42504,25: FOR t=1 TO 6: RANDOMIZE USR 42500: NEXT t
 620 RETURN
 700 REM check
 710 FOR e=1 TO 5: IF v(e)=room THEN  LET v(e)=0
 720 NEXT e
 725 POKE 42501,50: POKE 42504,125: POKE 42507,40: RANDOMIZE USR 42500
 727 IF obj=5 THEN  GO TO 9600
 730 RETURN
1000 REM draw room
1005 BORDER 0: PAPER 0: INK 7: CLS
1006 INK 4
1010 PLOT 15,169: DRAW 0,-162: DRAW 226,0: DRAW 0,162: DRAW -226,0
1020 PLOT 15,169: DRAW 26,-26: DRAW 0,-111: DRAW 174,0: DRAW 0,111: DRAW -174,0
1030 PLOT 41,33: DRAW -26,-26
1040 PLOT 215,33: DRAW 26,-26
1050 PLOT 215,143: DRAW 26,26
1060 INK 7
1080 FOR s=1 TO 4
1090 IF a$(room,s)="1" THEN  PRINT  INK 4; PAPER 0;AT 1,14;"▒▒▒▒";AT 2,14;"▒";
AT
 2,17;"▒";AT 3,14;"▒";AT 3,17;"▒": PLOT  OVER 1;120,43: DRAW  OVER 1;15,0
1100 IF a$(room,s)="2" THEN  PRINT  INK 4; PAPER 0;AT 9,27;"▒▒▒";AT 10,29;"▒";
AT
 11,29;"▒";AT 12,27;"▒▒▒": PLOT  OVER 1;215,95: DRAW  OVER 1;0,-15
1110 IF a$(room,s)="3" THEN  PRINT  INK 4; PAPER 0;AT 18,14;"▒";AT 18,17;"▒";AT
19,14;"▒";AT 19,17;"▒";AT 20,14;"▒▒▒▒": PLOT  OVER 1;135,32: DRAW  OVER 1;-15,
0
1120 IF a$(room,s)="4" THEN  PRINT  INK 4; PAPER 0;AT 9,2;"▒▒▒▒";AT 10,2;"▒";AT
 1
1,2;"▒";AT 12,2;"▒▒▒▒": PLOT  OVER 1;41,80: DRAW  OVER 1;0,15
1130 NEXT s
1140 RESTORE r(room)
1150 FOR e=USR "t" TO USR "u"+7: READ a: POKE e,a: NEXT e
1160 LET ink=INT (RND*5)+1
1170 IF ink=4 THEN  GO TO 1160
1180 FOR e=1 TO 5: IF v(e)=room THEN  PRINT  INK 6;AT 14,14:"K"
1185 LET a=10: LET b=20
1190 NEXT e
1200 RETURN
```

```
8000 DATA 0,0,0,14,63,113,192,128,0,0,0,6,141,255,246,0
8025 DATA 112,137,139,79,47,31,15,7,3,135,238,252,252,248,248,224
8050 DATA 15,16,39,67,72,39,16,15,240,8,116,50,2,196,8,240
8075 DATA 0,127,128,190,189,65,63,31,0,1,130,132,26,255,254,252
8100 DATA 3,715,15,15,15,7,3,192,224,240,240,240,240,224,192
8125 DATA 11,12,4,7,107,217,128,0,216,48,32,224,214,155,1,0
8150 DATA 7,7,247,183,247,223,247,82,255,255,255,255,255,255,255,134
8175 DATA 0,255,0,255,0,255,0,255,255,0,255,0,255,0,255,0
8200 DATA 0,0,0,15,255,15,0,0,0,0,1,227,255,227,1,0
8225 DATA 7,14,12,15,31,37,73,219,224,96,32,224,248,164,146,219
9000 REM define graphics
9010 RESTORE 9020: FOR g=USR "a" TO USR "k"+7: READ a: POKE g,a: NEXT g
9020 DATA 47,33,61,33,47,33,61,33,0,0,255,68,85,85,17,255,132,188,132,244,132,18
8,132,244,255,136,170,170,34,255,0,0,0,0,7,8,19,36,41,42,0,0,240,8,200,36,148,84
,84,148,36,200,16,224,0,0,42,41,36,19,8,7,0,0
9030 DATA 60,255,66,66,66,60,255,181,187,181,175,207,126,68,68,198
9040 DATA 0,0,0,255,255,255,129,255
9050 RETURN
9100 REM array of maze
9101 REM a$ denotes exits
9102 REM r denotes subroutines
9110 DIM v(5): DIM a(34): DIM c(34): DIM a$(30,4): DIM r(30)
9120 RESTORE 9130: FOR e=1 TO 30: READ a$(e): NEXT e
9130 DATA "23","234","4","23","234","34","13","12","234","134","1","13","123","4
","12","1234","4","13","123","34","3","13","3","13","1","12","14","12","124","14
"
9135 LET pos=8000
9140 FOR e=1 TO 30: LET r(e)=pos: LET pos=pos+25: IF pos=8250 THEN  LET pos=8000
9150 NEXT e
9160 RESTORE 9170: LET aa=.125: LET bb=.25: LET cc=.5: LET dd=5: LET ee=7: FOR e
=1 TO 34: READ a(e),c(e): NEXT e
9170 DATA cc,ee,cc,ee,aa,ee,aa,ee,aa,ee,aa,ee,bb,ee,bb,2,aa,ee,aa,ee,aa,ee,aa,ee
,bb,9,bb,ee,bb,ee,bb,dd,cc,dd,cc,9,cc,dd,aa,dd,aa,dd,aa,dd,aa,dd,bb,dd,bb,2,aa,d
d,aa,dd,aa,dd,aa,dd,bb,dd,bb,2,bb,4,bb,dd,1,ee
9190 RETURN
9200 REM initialise
9205 GO SUB 9500
9210 POKE 23658,8
9220 GO SUB 9000
9230 GO SUB 9100
9240 LET ti=0: LET obj=0: LET k=0: LET inv=5: LET room=16: LET lives=3
9242 FOR e=1 TO 5
9245 LET v(e)=INT (RND*30)+1: FOR s=1 TO e-1: IF v(e)=v(s) THEN  GO TO 9245
9247 NEXT s
9248 NEXT e
9250 GO SUB 1000
9260 LET x=10: LET y=10
9290 RETURN
9300 REM update lives
9310 LET lives=lives-1
9320 IF lives=0 THEN  GO TO 9400
9330 LET x=10: LET y=10: GO SUB 1000
9340 GO TO 20
9400 REM new game
9410 CLS : PRINT AT 10,5;"Press 'S' for a new game";AT 14,5;"You collected ";obj
;" objects";AT 16,5;"You lasted ";ti;" time units"
9420 FOR e=1 TO 34: BEEP a(e),c(e): IF CODE INKEY$=83 THEN  RUN
9430 NEXT e
9450 GO TO 9420
9500 REM mc sound
9520 RESTORE 9530: FOR q=42500 TO 42520: READ w: POKE q,w: NEXT q
9530 DATA 33,50,0,17,125,0,6,40,229,213,197,205,181,3,193,209,225,35,16,244,201
9540 RETURN
9600 REM game completed
9604 CLS : PRINT AT 4,2;"Congratulations you have been";AT 6,2;"saved from an aw
ful fate by";AT 8,2;"collecting the five gold bars.";AT 10,2;"You took ";ti;" ti
me units";AT 16,10;"WELL DONE": PAUSE 0
9605 PRINT AT 12,7;"Press any key"
9610 POKE 42501,45: POKE 42504,5: POKE 42507,100
9620 RANDOMIZE USR 42500
9630 IF INKEY$<>"" THEN  GO TO 9400
9640 GO TO 9620
```

LOST

Mission: to search out new civilizations.
Hazards: force field walls and asteroids.
Author: David Moore

```
  1 REM      ASTRO ZONE                              BY                    DA
VID MOORE
  2 CLEAR 49999: LET R$="7": LET L$="6": LET F$="0": LET H$="9": POKE 23658,8:
BRIGHT 1: BORDER 0: INK 7: PAPER 0: CLS : PRINT AT 10,10; INK 2; PAPER 7; FLASH
1;"PLEASE WAIT": GO SUB 9000
 12 REM          VARIABLES
 13 DIM S(3): LET HS=0: LET S(3)=1000: LET S(2)=2000: LET S(1)=3000
 14 LET AA=90: LET BB=80: LET CC=83: LET E=1: DIM D(3): DIM V(3): DIM R(3): DIM
 F(3): DIM N(3): LET F(1)=9: LET F(2)=80: LET F(3)=83: LET A=0: LET B=16: LET SC
=0: LET LI=3: LET N=0: LET ZAP=15
 15 LET R(1)=90: LET R(2)=80: LET R(3)=83: LET N(1)=90: LET N(2)=80: LET N(3)=8
3: LET F(1)=90: LET F(2)=80: LET F(3)=83: GO TO 2500
 16 CLS : PRINT AT 10,11; INK 2; PAPER 7; FLASH 1;"PLEASE WAIT": GO SUB 5000
 17 PRINT AT 10,11;"          "
 18 DIM A$(500): PRINT AT 0,0; INK 7; PAPER 0; OVER 1;A$
 19 PRINT AT 12,10;"          "
 20 FOR G=17 TO 21
 30 FOR A=1 TO : PRINT AT G,RND*29; INK 6;"©": NEXT A
 50 NEXT G
 52 PRINT AT 8,B; INK 5;"Ø"; INK 7;AT 9,B;"Ø": PAUSE 100
 55 REM       START OF LOOP
 56 IF N<10 THEN  GO TO 65
 58 IF INKEY$=F$ THEN  GO SUB 3000
 60 IF INKEY$=R$ THEN  LET B=B+1
 61 IF B>=29 THEN  LET B=29
 62 IF INKEY$=L$ THEN  LET B=B-1
 63 IF B<=2 THEN  LET B=2
 64 IF INKEY$=H$ THEN  GO SUB 6000
 65 LET A=USR 3280
 66 PRINT AT 0,1; INK 5;"SCORE ";SC;AT 0,13;"LIVES ";LI;AT 0,22;"LASERS ";ZAP
 69 FOR A=1 TO 2
 70 PRINT AT 21,RND*29; INK 6;"©"
 71 NEXT A
 75 LET N=N+2
 82 PRINT AT 21,RND*29; BRIGHT 1; INK 5;"©"
 85 IF N>2 THEN  PRINT AT 6,B;" ";AT 7,B+1;" ";AT 7,B-1;" ";AT 6,B-1;" ";AT 6,B
+1;" "
 90 PRINT AT 8,B; INK 7;"Ø";AT 7,B; INK 5;"Ø"
140 IF ATTR (9,B)<>71 THEN  GO TO 2000
150 BEEP .0025,B
160 LET SC=SC+2
170 IF N>=100 THEN  PRINT AT 21,RND*29; INK 2;"©"
190 IF SC=5000 OR SC=10000 THEN  LET LI=LI+1
200 IFSC=1000 OR SC=2000 THEN  LET ZAP=ZAP+1
300 GO TO 55
400 REM         END OF LOOP
2000 REM        BLOWN UP
2002 RESTORE 9770: FOR A=0 TO 17
2003 INK (RND*5+2): READ G$: PRINT AT 7,B;G$: READ G$: PRINT AT 8,B;G$: READ T:
BEEP .1,T
2005 NEXT A
2006 INK 7
2007 RESTORE 9770
2010 RANDOMIZE USR 50000
2092 LET LI=LI-1
2094 IF LI>0 THEN  GO TO 60
2125 BORDER 0
2130 PRINT AT 10,11; FLASH 1; INK 6; PAPER 1;"GAME OVER"; INK 1; PAPER 6;AT 9,10
;"▀▀▀▀▀▀▀▀▀▀▀▀";AT 10,10;"▌ ";AT 10,20;" ▐";AT 11,10;"▙▄▄▄▄▄▄▄▄▄▄▄▄▟"
2135 FOR A=1 TO 150: NEXT A
2140 IF SC>S(3) THEN  GO SUB 7000
2490 LET LI=3: LET E=1: LET ZAP=15: LET B=16: LET N=0: LET SC=0
2500 REM     INTRODUCTION LOOP
2501 CLS : GO SUB 7515
2503 RESTORE 9000
2505 FOR A=0 TO 66
2510 READ K: READ L: BEEP K,L
2520 NEXT A
2560 CLS : PLOT 0,175: DRAW 255,0: DRAW 0,-175: DRAW -255,0: DRAW 0,175
2570 PRINT  INK 5;AT 3,9;"D .  M O O R E";AT 5,12; INK 6;"PRESENTS": PAUSE 70: F
OR A=0 TO 8: READ K: READ L: BEEP K,L: NEXT A
2580 PRINT AT 9,1; INK 5; PAPER 0;"▀▀▀▀ ▀▀▀▀ ▀▀▀▀ ▀▀▀▀ ▀▀▀▀";AT 10
,1;"▀  ▀
 ▀    ▀  ▀ ▀▀  ▀";AT 11,1;"▀▀▀  ▀▀▀▀  ▀  ▀▀▀▀ ▀  ▀";AT 12,
1;"▀▀▀▀
    ▀  ▀  ▀ ▀ ▀  ▀";AT 13,1;"▀  ▀ ▀▀▀▀  ▀  ▀ ▀ ▀▀▀▀
2590 PRINT AT 16,4; INK 6;"▀▀▀▀ ▀▀▀▀ ▀▀  ▀ ▀▀▀▀";AT 17,4;"  ▀  ▀  ▀
 ▀▀  ▀ ▀
";AT 18,4;"  ▀  ▀  ▀ ▀ ▀▀  ▀ ▀▀▀";AT 19,4;"  ▀  ▀  ▀ ▀ ▀▀  ▀ ▀";AT 20,4;
"▀▀▀▀ ▀
▀▀▀  ▀  ▀ ▀▀▀▀"
2600 PAUSE 150
2610 CLS : PLOT 0,175: DRAW 255,0: DRAW 0,-175: DRAW -255,0: DRAW 0,175
2620 PRINT AT 2,7; INK 5;"A S T R O  Z O N E"; OVER 1;AT 2,7;"▔▔▔▔▔▔▔▔▔▔▔▔▔
"
2630 PRINT AT 6,8; INK 3;"I - INSTRUCTIONS";AT 8,9; INK 6;"S - START GAME";AT 10
,8; INK 4;"R - REDEFINE KEYS"
2640 PRINT AT 12,3; INK 3;"KEYS:-";AT 14,4; INK 6;L$;" - LEFT";AT 14,20; INK 4;R
$;" - RIGHT";
2650 PRINT AT 16,4; INK 4;F$;" - FIRE";AT 16,20; INK 6;H$;" - HYPER"
2653 RESTORE 9000
2655 FOR A=0 TO 66
2660 READ K: READ L: BEEP K,L
2670 IF INKEY$<>"" THEN  GO TO 2700
2680 NEXT A
2690 GO TO 2500
2700 IF INKEY$="I" THEN  GO TO 8000
2710 IF INKEY$="S" THEN  GO TO 16
2720 IF INKEY$="R" THEN  GO TO 8500
2800 GO TO 2680
3000 REM          FIRING
3001 IF ZAP<=0 THEN  RETURN
3002 IF SC>3000 THEN  GO SUB 4000
3003 FOR D=9 TO 13: PRINT AT D,b; INK 5;"E"
3005 IF ATTR (D+1,B)=70 THEN  LET SC=SC+50
3006 IF ATTR (D+1,B)=69 THEN  LET SC=SC+200
3007 IF ATTR (D+1,B)=66 THEN  LET LI=LI-1
3008 IF LI<=0 THEN  GO TO 2130
3010 NEXT D
3020 LET ZAP=ZAP-1
3050 FOR Y=4 TO 16 STEP 2
3060 BEEP 0.0125,Y
3070 NEXT Y
3080 FOR D=9 TO 13: PRINT AT D,B;" "
3085 NEXT D
3090 RETURN
4000 REM          WALL
4005 LET S=RND*27: PRINT AT 21,0; INK 6;"EEEEEEEEEEEEEEEEEEEEEEEEEEEEEE
EE"; INK
5; PAPER 0;AT 21,S;"Ø";AT 21,S+2;"©";AT 21,S+1; INK 7;" "
4010 RETURN
5000 REM     DRAWING SPACESHIP
5005 INK 0: PLOT 131,169: DRAW 44,-26,-0.1: DRAW 5,-16,-0.7: DRAW 53,-12,-0.2: D
RAW 0,-19,-2.3: DRAW -33,0: DRAW 13,-9,-0.1: DRAW -32,0,-0.5: DRAW 13,9: DRAW 7,
0: DRAW -52,0
5010 DRAW -0,16,0.4: DRAW -11,2,0.5: PLOT 175,143: DRAW -44,0: PLOT 179,127: DRA
W -40,0: PLOT 174,131: DRAW -5,10,0.9: DRAW -24,0: DRAW 6,-10: DRAW 23,0: PLOT 1
40,141: DRAW 5,-10: DRAW -14,0: DRAW 0,10: DRAW 9,0
5020 PLOT 131,169: DRAW -44,-26,0.1: DRAW -5,-16,0.7: DRAW -53,-12,0.2: DRAW 0,-
19,2.3: DRAW 33,0: DRAW -13,-9,0.1: DRAW 32,0,0.5: DRAW -13,9: DRAW -7,0: DRAW 5
2,0
030 DRAW 8,16,-0.4: DRAW 11,2,-0.5: PLOT 87,143: DRAW 44,0: PLOT 83,127: DRAW 40
,0: PLOT 87,131: DRAW 5,10,-0.9: DRAW 24,0: DRAW -6,-10: DRAW -23,0: PLOT 122,14
1: DRAW -5,-10: DRAW 14,0: DRAW 0,10: DRAW -9,0:
5040 INK 7: RETURN
6000 REM       HYPERSPACE
6005 PRINT AT 7,B;" ";AT 8,B;" ": LET B=RND*29: PRINT ; INK 5;AT 7,B;"Ø";AT 8,B
;
 INK 7;"Ø"
6010 RETURN
7000 REM       HALL OF FAME
7005 PAUSE 200
7020 CLS : PRINT AT 1,8; INK 7;"W E L L  D O N E";AT 1,8; OVER 1;"▔▔▔▔▔▔▔▔▔▔▔▔▔
▔"
7030 PRINT AT 5,0; INK 5;"YOU HAVE ACHIEVED ONE OF TODAYS HIGHEST SCORES.
                                                SELECT YOUR INITIALS WITH THECONTRO
L KEYS AND PRESS FIRE TO  ENTER."
7040 LET F=65
7050 PRINT AT 15,(1+(2*E)); INK 6;CHR$ F
7055 FOR A=1 TO 10: NEXT A
```

Take a journey through hyperspace and search out new civilisations who will sustain you, in this game for the 48K Spectrum.

Your mothship has suffered damaging attacks from hostile forces. You have been dispatched on a mission to a distant planet many light years away.

En route, you meet many hazards which could foil your plans. Blue aliens will try to impede your progress: shoot them down and you'll gain extra points. Yellow asteroids also pose a danger — if you can destroy them, bonus points will be yours.

But that's child's play in comparison with force field walls which will block your path, and red asteroids. If you hit the red asteroids with your lasers, you lose a life.

As you go, you can pick up extra lives and lasers. Take your courage with you on your venture through darkest space — you'll need it!

How it works

2-15 set up variables
55-300 main loop
2000-2490 explosion routine
2500-2800 introduction screens
3000-3090 firing routine
4000-4010 set up force field walls
5000-5040 draw mothership
6000-6010 hyperspace routine
7000-7690 hall of fame
8000-8080 instructions
8500-8580 redefines keys
9000-9450 data for character set

IN SPACE

9460-9630 data for UDGs
9700-9750 data for white noise
9760-9770 data for explosion
9800-9810 data for tune

Variables

B x position of space ship
R$ move spaceship right
L$ move spaceship left
F$ fire
H$ hyperspace
HS high score
S score
S(1) third highest score
S(2) second highest score
S(3) first score

```
7060 IF INKEY$=R$ THEN  LET F=F+1
7070 IF INKEY$=L$ THEN  LET F=F-1
7080 IF F<65 THEN  LET F=90
7090 IF F>90 THEN  LET F=65
7100 IF INKEY$=F$ AND E=1 THEN  LET AA=F: LET E=E+1: LET F=65: BEEP .1,12
7105 FOR A=1 TO 10: NEXT A
7107 PRINT AT 15,(11+(2*E)); INK 6;CHR$ F
7110 IF INKEY$=F$ AND E=2 THEN  LET BB=F: LET E=E+1: LET F=65: BEEP .1,12
7115 FOR A=1 TO 10: NEXT A
7117 PRINT AT 15,(11+(2*E)); INK 6;CHR$ F
7120 IF INKEY$=F$ AND E=3 THEN  LET CC=F: LET E=E+1: LET F=65: BEEP .1,12: GO TO
 7510
7500 GO TO 7050
7510 PAUSE 100: LET S(3)=SC
7513 RETURN
7515 LET R(1)=AA: LET R(2)=BB: LET R(3)=CC
7520 IF S(3)>S(2) THEN  LET WW=S(2): LET S(2)=S(3): LET S(3)=WW: LET D(1)=R(1):
LET D(2)=R(2): LET D(3)=R(3): LET R(1)=N(1): LET R(2)=N(2): LET R(3)=N(3): LET N
(1)=D(1): LET N(2)=D(2): LET N(3)=D(3)
7530 IF S(2)>S(1) THEN  LET ZZ=S(1): LET S(1)=S(2): LET S(2)=ZZ: LET V(1)=N(1):
LET V(2)=N(2): LET V(3)=N(3): LET N(1)=F(1): LET N(2)=F(2): LET N(3)=F(3): LET F
(1)=V(1): LET F(2)=V(2): LET F(3)=V(3)
7540 CLS : PRINT AT 5,7; INK 5;S(1);AT 5,14;".... ";CHR$ F(1);" ";CHR$ F(2);" ";
CHR$ F(3);AT 7,7; INK 4;S(2);AT 7,14;".... ";CHR$ N(1);" ";CHR$ N(2);" ";CHR$ N(
3);AT 9,7; INK 6;S(3);AT 9,14;".... ";CHR$ R(1);" ";CHR$ R(2);" ";CHR$ R(3)
```

```
7560 PRINT AT 1,3; INK 7;"H I G H E S T  S C O R E S"; OVER 1;AT 1,3;"_________
_____"
7580 INK 7: PLOT 0,0: DRAW 255,0: DRAW 0,175: DRAW -255,0: DRAW 0,-175: PRINT AT
 1,3; INK 2; OVER 1;"                                "
7610 RETURN
8000 REM       INSTRUCTIONS
8005 CLS
8010 PRINT AT 1,11;"ASTRO ZONE"; OVER 1;AT 1,11;"__________"
8020 PRINT AT 3,0; INK 5;"YOU ARE THE LAST SURVIVER OF THEMOTHERSHIP AFTER AN AT
TACK      UPON IT. YOU MUST TRAVEL IN YOURSPACESHIP TOWARDS THE PLANET    BASE W
HERE YOU CAN FIND HELP TO DESTROY THE ENEMY."
8030 PRINT AT 10,0; INK 4;"AVIOD ALL ALIENS,MISSILES,      ASTEROIDS AND   WALLS
. IF YOU   ZAP A RED ASTEROID YOU  WILL    LOSE A LIFE."
8040 PRINT AT 15,0; INK 6;"YOU HAVE:-                          3 - LIFES
        15 - LASERS                                                  YOU
NEED:-                      5000 POINTS - FOR AN EXTRA LIFE 1000 POINTS - FOR AN
EXTRA LASER"
8050 PRINT #0; INK 2; PAPER 7; FLASH 1;"  PRESS SPACE KEY TO CONTINUE   "
8060 FOR A=4 TO 7: PRINT  OVER 1;AT 1,11; INK A;"           "
8061 NEXT A
8062 IF INKEY$=" " THEN  GO TO 8070
8064 GO TO 8060
8070 BEEP .1,24: BEEP .1,12
8080 GO TO 2610
8500 REM      CHOOSING KEYS
8510 INK 7: PAPER 0: BRIGHT 1: CLS
8520 PRINT AT 1,8;"ASTRO ZONE KEYS";AT 1,8; OVER 1;"_______________"
8530 PRINT AT 4,3; INK 4;"TO MOVE LEFT   ";: INPUT L$: IF LEN L$<>1 THEN  GO TO
8530
8535 PRINT  INK 5;L$: PRINT AT 6,3; INK 5;"TO MOVE RIGHT  ";: INPUT R$: IF LEN R
$<>1 THEN  GO TO 8535
8540 PRINT  INK 5;R$: PRINT AT 8,3; INK 4;"TO FIRE        ";: INPUT F$: IF LEN F
$<>1 THEN  GO TO 8540
8545 PRINT  INK 5;F$: PRINT AT 10,3; INK 5;"TO HYPERSPACE  ";: INPUT H$: IF LEN
H$<>1 THEN  GO TO 8545
8547 PRINT  INK 5;H$
8550 PRINT AT 16,11; INK 6; PAPER 1; FLASH 1;"GOOD LUCK!": PAUSE 100: PRINT AT 1
8,9; INK 5;"YOU'LL NEED IT!"
8560 PRINT #0; INK 2; PAPER 7; FLASH 1;"    PRESS ANY KEY TO CONTINUE   "
8570 IF INKEY$<>"" THEN  GO TO 8580
8575 GO TO 8570
8580 BEEP .1,24: BEEP .1,12: GO TO 2610
9000 REM      CHARATER SET
9010 POKE 23606,0: POKE 23607,249
9020 FOR X=15616 TO 16383: POKE X+48384,PEEK X: NEXT X
9025 FOR X=64264 TO 64471: READ Y: POKE X,Y: PRINT  INK 5; PAPER 0; BRIGHT 1;AT
15,3;"ABCDEFGHIJKLMNOPQRSTUVWXYZ": NEXT X
9030 FOR X=64120 TO 64207: READ Y: POKE X,Y: PRINT AT 17,11; INK 4; PAPER 0;"012
3456789": NEXT X
9100 DATA 0,126,98,98,126,98,98,0
9110 DATA 0,126,98,124,98,98,126,0
9120 DATA 0,126,96,96,96,96,126,0
9130 DATA 0,124,98,98,98,98,124,0
9140 DATA 0,126,96,124,96,96,126,0
9150 DATA 0,126,96,124,96,96,96,0
9160 DATA 0,126,96,96,102,98,126,0
9170 DATA 0,98,98,126,98,98,98,0
9180 DATA 0,126,24,24,24,24,126,0
9190 DATA 0,126,24,24,24,24,120,0
9200 DATA 0,100,104,112,104,100,98,0
9210 DATA 0,96,96,96,96,96,126,0
9220 DATA 0,126,106,106,106,106,106,0
9230 DATA 0,126,98,98,98,98,98,0
9240 DATA 0,126,98,98,98,98,126,0
9250 DATA 0,126,98,98,126,96,96,0
9260 DATA 0,126,98,98,106,102,126,0
9270 DATA 0,126,98,98,126,104,102,0
9280 DATA 0,126,96,126,2,2,126,0
9290 DATA 0,126,24,24,24,24,24,0
9300 DATA 0,98,98,98,98,98,126,0
9310 DATA 0,98,98,98,98,52,24,0
9320 DATA 0,106,106,106,106,106,126,0
9330 DATA 0,102,102,24,102,102,102,0
9340 DATA 0,98,98,98,126,8,8,0
9350 DATA 0,126,12,24,48,96,126,0
9360 DATA 0,126,102,106,106,114,126,0
9370 DATA 0,24,120,24,24,24,126,0
9380 DATA 0,126,2,2,126,96,126,0
9390 DATA 0,126,6,62,6,6,126,0
9400 DATA 0,96,96,100,126,4,4,0
9410 DATA 0,126,96,96,126,2,126,0
9420 DATA 0,126,96,96,126,98,126,0
9430 DATA 0,126,6,6,6,6,6,0
9440 DATA 0,126,98,126,98,98,126,0
9450 DATA 0,126,98,98,126,2,2,0
9460 REM        SET U.D.G.'S
9470 LET A=PEEK 23675+256*PEEK 23676
9480 FOR B=A TO A+111
9490 READ C: POKE B,C: PRINT AT 19,9; INK 6; PAPER 0;"ABCDEFGHIJKLMN": NEXT
 B
9500 DATA 254,254,198,124,68,56,56,16
9510 DATA 0,0,16,40,40,84,84,170
9520 DATA 60,126,127,63,255,254,254,78
9530 DATA 102,36,126,195,195,255,255,153
9540 DATA 56,16,56,16,56,16,56,16
9550 DATA 255,68,68,255,17,17,255,0
9560 DATA 24,57,127,255,255,127,57,24
9570 DATA 24,156,254,255,255,254,156,24
9580 DATA 0,0,0,0,40,16,16,56
9590 DATA 16,16,40,0,0,0,0,0
9600 DATA 0,16,16,0,68,40,0,100
9610 DATA 0,40,68,0,16,16,0,0
9620 DATA 16,16,16,130,68,0,0,198
9630 DATA 0,0,68,130,16,16,16,0
9700 REM     WHITE NOISE DATA
9710 FOR X=50000 TO 50016
9720 READ A: POKE X,A
9730 NEXT X
9740 DATA 33,00,10,43,126,211,254,06,7,05,32,-3,175,132,200,24,-14
9750 RETURN
9760 REM          EXPLOSION
9770 DATA "I","U",17,"H","L",16,"H","H",14,"I","U",17,"H","L",16,"H","H",14,
"I",
"U",16,"H","L",14,"H","H",12,"I","U",16,"H","L",14,"H","H",12,"I","U",14,"H
","L"
,12,"H","H",11,"I","U",14,"H","L",12,"H","H",11
9800 REM           TUNE
9810 DATA .05,12,.05,11,.05,10,.2,9,.05,7,.35,5,.2,0,.05,0,.2,5,.05,0,.2,7,.05,0
,.5,9,.05,24,.05,23,.05,22,.2,21,.05,19,.35,17,.2,12,.05,12,.2,17,.05,12,.2,19,.
05,12,.5,21,.05,-7,.2,-2,.05,-2,.2,-2,.05,-2,.35,-2,.2,-7,.05,-2,.2,-3,.05,-3,.2
,-3,.05,-3,.35,-3,.2,-3,.05,-4,.2,-5,.05,-5,.2,-5,.05,-5,.2,-1,.05,-5,.2,-1,.05,
2,.2,0,.05,-1,.2,-2,.05,-3,.2,-5,.05,-7,.2,-8,.05,-12,.05,12,.05,11,.05,10,.2,9,
.05,7,.35,5,.35,0,.35,5,.35,9,.5,5
9900 DATA .05,0,.05,4,.05,7,.05,4,.05,7,.05,12,.05,7,.05,12,.5,16
9999 REM U.D.G. ARE AS FOLLOWS-    A=A    B=B    C=C    D=D        E=E    F=F

 G=G    H=H        I=I    J=J    K=K    L=L        M=M    N=N
```

Get your maths in shape

Use your computer to help you with your maths homework. All you have to do is specify a mathematical function and the computer will draw on screen what the function looks like, whether it's a parabola, straight line, or whatever.

Up to six functions may be shown on screen at any one time. Please note that you cannot input x**2 for both versions.

These programs are for the ZX81 and Spectrum. Now, over to you to let your imagination show you how to make the best use of this utility.

Variables

X$ x of oy
y$ y of ox
B draw the axes
u number of functions you can input (six)
I$ function
X all abscissae (-00 + 00)
G y on screen depending on position of axes and the function I$ (f(x))
U x on screen depending on position of axes and x
Q,W co-ordinates of =

How it works
ZX81

2-33 draw screen, position axes co-ordinates
40-51 variable x$, abscissa of oy axis, variable y$, ordinate of ox axis
53 delete all co-ordinates from lines 32-33 and where y of ox was written
54-58 draw axes
90-100 possible functions on screen
100-110 I$ function
111-121 delete previous data to enable other functions to be input
130 print function
140 possible abscissa between -20 and 20
145-146 G = y on screen, V = x on screen
150 screen limits
160-170 draw curve
171-172 options
180-191 choose option
200 press K to input another function
300-301 press P to restart
400 press R to print cursor at 20,19

ZX81 listing

```
  2 PRINT AT 0,0;"▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒"
 10 FOR A=1 TO 20
 20 PRINT AT A,0;"▒                                ▒"
 30 NEXT A
 31 PRINT AT 21,0;"▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒"
 32 PRINT AT 9,10;"0";AT 1,10;"9";AT 20,10;"-9"
 33 PRINT AT 10,10;"+0";AT 10,1;"-9";AT 10,19;"11"
 40 PRINT AT 18,22;"X DE(OY)?"
 41 INPUT X$
 50 PRINT AT 18,22;"Y DE(OX)?"
 51 INPUT Y$
 53 PRINT AT 9,10;" ";AT 1,10;" ";AT 20,10;"  ";AT 10,10;"  ";AT 10,1;"  ";AT 10,19;"  ";AT 18,22;"▒▒▒▒▒▒▒▒▒▒▒▒▒▒"
 54 FOR B=1 TO 20
 55 PRINT AT 10-VAL Y$,B;"."
 56 PRINT AT B,10+VAL X$;"."
 57 NEXT B
 58 PRINT AT 10-VAL Y$,0;"▬";AT 10-VAL Y$,21;"▬";AT 0,10+VAL X$;"▬";AT 21,10+VAL X$;"▬"
 60 REM ----------------------

 90 FOR U=4 TO 10
100 PRINT AT 2,22;"F(X)=?"
110 INPUT I$
111 PRINT AT 18,24;"▒▒▒▒▒▒▒▒"
120 PRINT AT 19,24;"▒▒▒▒▒▒▒▒"
121 PRINT AT 20,24;"▒▒▒▒▒▒▒▒"
130 PRINT AT U,22;I$;AT 2,22;"F(X)=▒"
135 REM ----------------------

140 FOR X=-20 TO 20
145 LET G=20-VAL I$-VAL Y$-10
146 LET V=X+VAL X$+10
150 IF G<1 OR G>20 OR V<1 OR V>20 THEN GOTO 170
```

410-450 control cursor
510-520 press 0 to print co-ordinates of point on axes
540 return to menu

Spectrum

The program is mostly the same as for the ZX81, except for some improvements.
1 go to 9000 to set up UDG
3-50 set screen
60-90 input function (up to 10) and ink
110-160 draw curve. If curve 8,5 or 16,7 then next x
170-310 options: to draw more curves on same screen; to find co-ordinates of one point; to quit present screen
400-540 move cursor up, down, left and right, when 0 is pressed, co-ordinates appear on axes
9000-9080 UDG

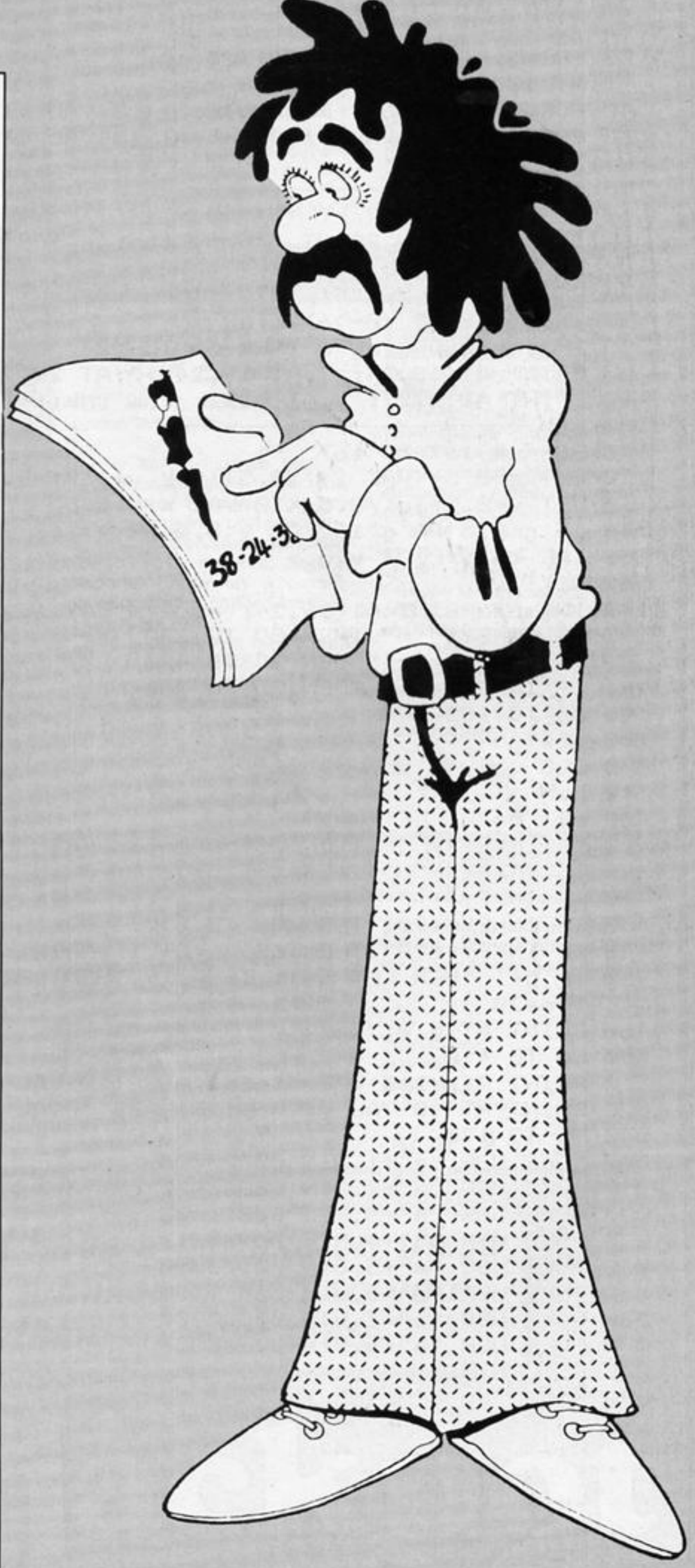
If you've always been abysmal at maths, don't despair — these programs by Guillaume Thibaudeau could give you a helping hand and restore your flagging interest

```
 160 PRINT AT G,V;"+"
 170 NEXT X
 171 PRINT AT 19,24;"PLUS=+";AT
18,24;"<==R"
 172 PRINT AT 20,24;"RUN=P"
 180 IF INKEY$="K" THEN GOTO 200

 181 IF INKEY$="R" THEN GOTO 400

 190 IF INKEY$="P" THEN GOTO 300
 191 GOTO 180
 200 NEXT U
 300 CLS
 301 RUN
 400 LET Q=20
 401 LET W=19
 410 IF INKEY$="5" THEN LET W=W-
1
 411 IF INKEY$="5" THEN PRINT AT
 Q,W+1;"  "
 420 IF INKEY$="6" THEN LET Q=Q+
1
 421 IF INKEY$="6" THEN PRINT AT
 Q-1,W;"  "
 430 IF INKEY$="7" THEN LET Q=Q-
1
 431 IF INKEY$="7" THEN PRINT AT
 Q+1,W;"  "
 432 IF INKEY$="0" THEN GOTO 510

 440 IF INKEY$="8" THEN LET W=W+
1
 441 IF INKEY$="8" THEN PRINT AT
 Q,W-1;" "
 442 IF Q<1 THEN LET Q=1
 443 IF W>19 THEN LET W=19
 444 IF W<1 THEN LET W=1
 449 IF Q>20 THEN LET Q=20
 450 PRINT AT Q,W;"<="
 500 GOTO 410
 510 PRINT AT Q,10+VAL X$;ABS (1
0-VAL Y$-Q)
 511 LET O=ABS (-VAL X$+W-11)
 520 PRINT AT 10-VAL Y$,W-1;O;AT
 Q,W;"  ";AT Q,W-1;"■"
 540 GOTO 171
```



Spectrum listing 1

```
  1 GO SUB 9000
  3 LET a$=""
  4 LET b$="                              "
  5 PRINT AT 0,0;a$: FOR a=1 TO 20: PRINT AT a,0;b$: NEXT a: PRINT AT 21,0;a$
 10 PRINT AT 10,10;"0";AT 1,10;"9";AT 20,10;"-9";AT 10,1;"-9";AT 10,19;"11"
 20 PRINT AT 18,22;"x of (oy)?": INPUT x$: PRINT AT 18,22;"y of (ox)?": INPUT y
$
 30 PRINT AT 1,10;"  ";AT 20,10;"   ";AT 10,10;"     ";AT 10,1;"    ";AT 10,19;
"  ";AT 18,22;""
 40 FOR b=7 TO 167: PLOT b,8.5*(10+VAL y$): PLOT 8.5*(10+VAL x$),b: NEXT b
 50 PRINT AT 11-VAL y$,0;"-";AT 10-VAL y$,21;"+";AT 0,10+VAL x$;"+";AT 21,10+VA
L x$;"-"
 55 REM ------------------------
 60 FOR u=4 TO 10
 65 IF u=10 THEN PRINT "sorry,that's too much"
 66 STOP
 70 PRINT AT 2,22;"F(x)=?": INPUT i$
 72 INPUT "ink? (0->6)";ink
 75 IF ink<0 OR ink>6 THEN GO TO 72
 80 PRINT AT 18,24;"";AT 19,24;"";AT 20,24;""
 90 PRINT AT 2,27;"";AT u,22; INK ink;i$
100 REM ------------------------
110 FOR x=-167 TO 167
120 LET g=8.5*(VAL i$)/8.5+(VAL y$+10)*8.5
130 LET v=8.5*(x)/8.5+(10+VAL x$)*8.5
140 IF g<8.5 OR g>167 OR v<8.5 OR v>167 THEN GO TO 160
150 INK ink: PLOT v,g
160 NEXT x
170 INK 0: PRINT AT 19,24;"more=m";AT 18,24;"<==r";AT 20,24;"exit=p"
180 IF INKEY$="m" THEN GO TO 200
183 IF INKEY$="r" THEN GO TO 400
185 IF INKEY$="p" THEN GO TO 300
195 GO TO 180
200 NEXT u
300 CLS
310 RUN
400 LET q=20: LET w=19
410 IF INKEY$="5" THEN LET w=w-.1: PRINT AT q,w+1;"  "
420 IF INKEY$="6" THEN LET q=q+.1: PRINT AT q-1,w;"  "
430 IF INKEY$="7" THEN LET q=q-.1: PRINT AT q+1,w;"  "
432 IF INKEY$="0" THEN GO TO 510
440 IF INKEY$="8" THEN LET w=w+.1: PRINT AT q,w-1;" "
450 IF q<1 THEN LET q=1: IF w>19 THEN LET w=19: IF w<1 THEN LET w=1: IF q>20 TH
EN LET q=20
460 PRINT AT q,w;"<="
500 GO TO 410
510 PRINT AT q,10+VAL x$;INT ABS (10-VAL y$-q)
520 PRINT AT 10-VAL y$,w-1;INT ABS (-VAL x$+w-11);AT q,w;"  ";AT q,w-1;""
540 GO TO 170
9000 POKE USR "a"+1,BIN 00000000
9010 POKE USR "a"+2,BIN 00000000
9020 POKE USR "a"+3,BIN 00011100
9030 POKE USR "a"+4,BIN 00100010
9040 POKE USR "a"+5,BIN 00100010
9050 POKE USR "a"+6,BIN 00011100
9060 POKE USR "a"+7,BIN 00000000
9070 POKE USR "a"+8,BIN 00000000
9080 RETURN
9090 SAVE "geom" LINE 1
```

Bewarehouse
48K £5.95

Positive Image, 7 James St, Brigeton, Glasgow

An enjoyable game which you'll want to play again and again. Bewarehouse plays a tune when loaded, with Welcome flashing across the colourful loading screen. A ghost rushes across next screen top introducing the complete instructions.

The object is to get as many men as possible across the warehouse floor and up the ladder to safety. But the building is haunted and the ghosts don't like intruders, so they roll barrels and throw boxes at them — with more on each of the 12 levels. Ghosts appear at higher levels to chase or obstruct intruders.

Your energy, shown screen top, is limited and drains away faster when you jump to catch the red pipe in order to avoid the barrels. At screen bottom are lives left out of five and current score. A satisfying "bop" noise accompanies being hit by a box, which moves from side to side when falling down towards you, and the figure revolves when hit by a barrel.

When no lives are left there is a Hall of Fame, offer of another game, instructions or quit. **T.W.**

instructions	80%
playability	80%
graphics	70%
value for money	65%

★ ★ ★

Jackpot
48K £5.50

Michael Horgan, Felix Hse, 22 Percy Rd, Isleworth

Only available through mail order, this fruit machine simulation in BASIC is similar to many listed in magazines. However, it saves time to have one on cassette if — like me — you're lazy and enjoy gambling with pretend money.

Some nice features — so often missed by programmers — are a redefined character set, sounds announcing loading started and music when complete. Unlike a real machine the symbols do not move down in sequence, but are completely random — so you can't cheat!

A very colourful loading screen gives way to complete instructions spread over two screens, with the opportunity to ZX print the list of payouts. There are hold/cancel and gamble/collect facilities, full use of sound with a jackpot tune, nine skill levels, a 27 ways to win feature, entering of name, score rating comments and high score win. You start with £1.90 and take your chance!

Even though it's not unique, I found it fun and quite addictive. I lost all my cash in hand at one point and was told: "You're skint" — how true! **T.W.**

instructions	70%
playability	70%
graphics	60%
value for money	65%

★ ★ ★

Les Flics
48K £6.95

PSS, 452 Stoney Stanton Rd, Coventry CV6 5DE

One side of the cassette loads for keyboard and the other for Kempston Joystick. A printed instruction booklet is included. The game starts straightaway with a town plan with nine buildings, parks, two patrolling police cars and the pink creature ... with a tail!

Les Flics, under ze commant ov Unspecteur Cleudeau of ze Sureté, neu eggsactly weut jew are eup teu — yew are geuing tew trah en steal a gem stone in hees care.

Also, Cleudeau has Gendarme Kaolin (disguised as a chef), his trusty servant, to 'elp heem — so yew foel, yew 'ave neo chance ... or 'ave yew?

Go around the town, entering buildings whose interiors are platform games and pick up various items, find out what they do, and finally get the diamond — the Purple Puma.

Fast moving French police, hindered by the bungling Inspecteur Cleudeau, generously allow you three attempts at controlling that pink character — before failure leads to the Bastille.

From the moment the French tune announces Game Loaded you need all your wits about you to navigate narrow roads, evade Les Flics and find how each item helps you on your colourful quest. **T.W.**

instructions	75%
playability	85%
graphics	80%
value for money	80%

★ ★ ★ ★

Quest for Eternity
48K £7.99

APS, No. 1, Golden Square, London W1R 3AB

This is an intelligence test to prove your suitability to become a Master of Eternity. You are deposited inside a non-functioning spaceship and left to find the bits to make it work, find a teleportal booth on a distant planet and return to the Chamber of Creation.

This is an all text adventure, written in BASIC, but surprisingly fast even so. It has a simple input interpreter, allowing two word verb-noun commands, and abbreviations for directions. The usual save to tape facilities are available. I must admit to not liking the colour scheme for the screen, but perhaps that's just personal. The descriptions of locations, important in creating atmosphere, are quite effective.

Try as I may, I can't get this pesky spaceship to work! In fact, I can't even get my spacesuit on. I've pressed buttons, been suffocated, tried to open a packing case with the laser knife — all to no avail. I even tried to go to sleep but my Spectrum would't let me!

If you like the idea of the plot, and you have a few hours to spend, this may be for you. **D.M.**

instructions	95%
playability	85%
graphics	N/A
value for money	65%

★ ★ ★

Invasion
48K £6.99

APS, No. 1, Golden Square, London W1R 3AB

"If you don't want an intellectually challenging strategic wargame, put the tape back on the shelf!" reads the blurb. A bit of an overstatement, I feel.

Basically this is a computer board game in which you command eight armies represented by tanks on a numbered grid. Your opponents appear from the north. You have the option to reinforce, move or decrease the strength of an army in each turn. Resources are limited by the number of cities you control. Having deployed your forces, you attack your enemies and push them back. Deploy them well and you win, but over stretch yourself or fail to reinforce soon enough and...

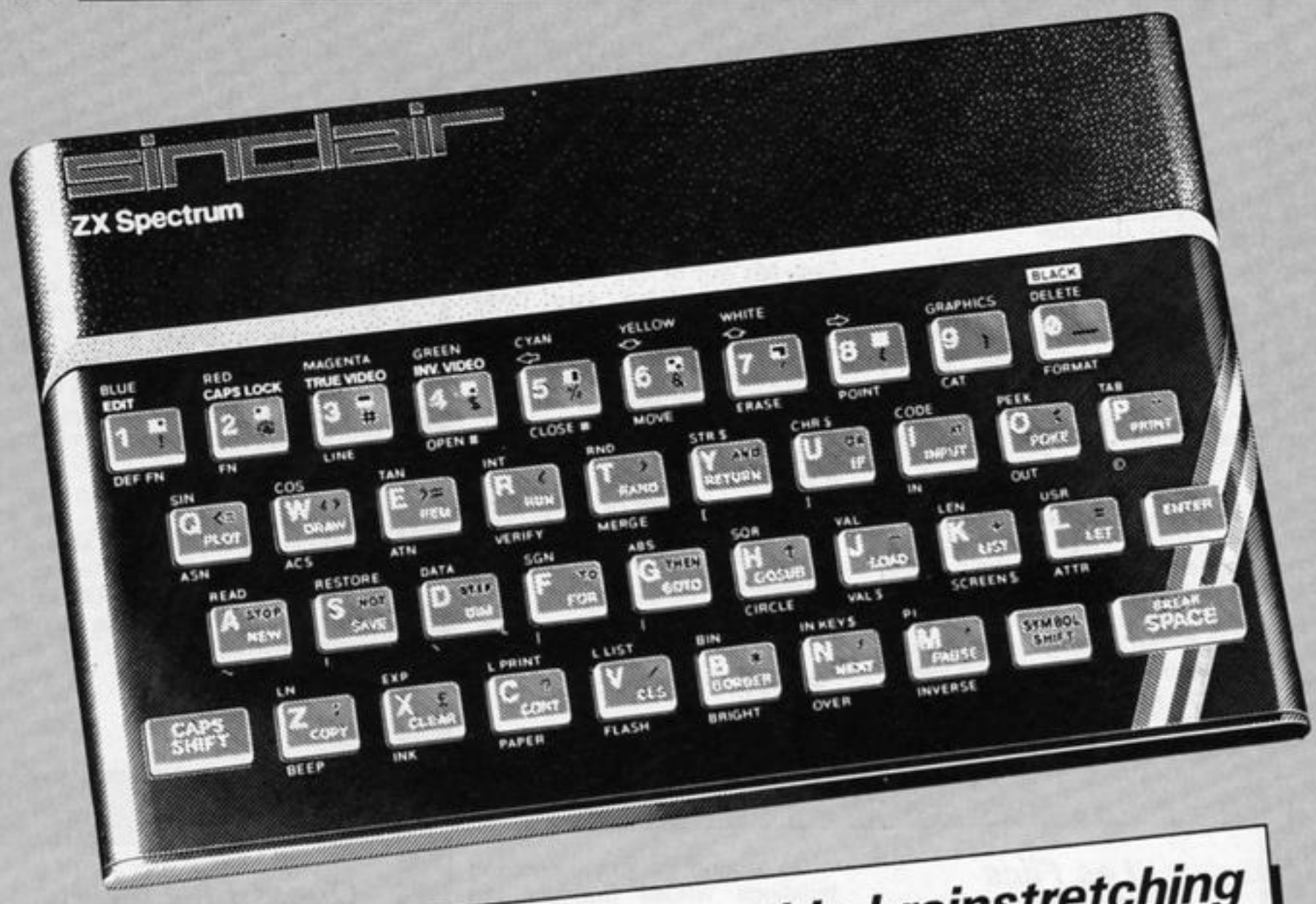
The game is written in BASIC and is very slow in deciding what has happened during a battle. Unfortunately you see and hear nothing of it. Whilst the screen presentation is undeniably clever it just doesn't measure up to the competition from machine coded games using sprites. Similarly, warlike sound effects would have livened the proceedings up. **D.M.**

instructions	95%
playability	60%
graphics	75%
value for money	70%

★ ★ ★

Take your chances and have a gamble on these new games. They're a mixed bunch so you should find something to your taste

Hit the jackpot



Test your mental abilities in this brainstretching teaser, designed for you by HCW regular Andrew Bird. It's impossible — or is it?

CAN YOU ECHO YOUR COMPUTER'S THOUGHTS?

How's your memory? This game will test your powers of logic and perception. Can you remember sequences of colours and notes? Try this, and you'll soon find out.

The game starts when the computer prints a square of a certain colour, and plays a note to go with it. You must then copy it. Each time, one more square is added to a maximum of 30 squares, which are displayed for you in rapid succession.

You can give yourself a pat on the back if you manage to remember all 30. Either you have a fantastic memory for colours and an excellent perception of sound — or else you've cheated.

How it works

10-70 set up variables and skill level
100-210 set up arrays a, b and c
300-360 draw game
400 start of main loop
500-560 computer plays
700-760 your turn to copy
900 end of main loop
1000-1060 computer checks for correct input, ends game if wrong
2000-2010 clear colours
7000-7100 instructions

Variables

DIM a vertical position
DIM b horizontal position
DIM c ink colour
a$ title
b$ level
skill skill level
n main loop
g mini loop
f general purpose loop

```
 1 REM  Kopycat By A.G.Bird.
 5 POKE 23609,30: GO SUB 7000
10 DIM a(30): DIM b(30): DIM c(30)
20 LET a$="KOPYCAT BY A G BIRD": LET b$="LEVEL"
30 BORDER 0: PAPER 0: CLS
40 FOR f=7 TO 25: PRINT AT 0,f; PAPER RND*6+1; INK 9;a$(f-6): BEEP .02,f: NEXT
f
50 INPUT "Skill Level 1, 2, 3, 4 or 5 ? ";skill
60 IF skill<1 OR skill>5 THEN  BEEP .5,0: GO TO 20
70 BORDER 7: PAPER 7: CLS
99 REM  Set up arrays
100 FOR f=1 TO 6: LET a(f)=1: NEXT f
110 FOR f=7 TO 12: LET a(f)=5: NEXT f
120 FOR f=13 TO 18: LET a(f)=9: NEXT f
130 FOR f=19 TO 24: LET a(f)=13: NEXT f
140 FOR f=25 TO 30: LET a(f)=17: NEXT f
150 FOR f=1 TO 25 STEP 6: LET b(f)=4: NEXT f
160 FOR f=2 TO 26 STEP 6: LET b(f)=8: NEXT f
170 FOR f=3 TO 27 STEP 6: LET b(f)=12: NEXT f
```

```
 180 FOR f=4 TO 28 STEP 6: LET b(f)=16: NEXT f
 190 FOR f=5 TO 29 STEP 6: LET b(f)=20: NEXT f
 200 FOR f=6 TO 30 STEP 6: LET b(f)=24: NEXTf
 210 FOR f=1 TO 30: LET c(f)=INT (RND*(skill+1))+1: NEXT f
 299 REM  Draw game
 300 FOR f=1 TO 19: PRINT AT f,1; INK f/4;a$(f): NEXT f
 310 FOR f=12 TO 172 STEP 32: PLOT 28,f: DRAW 192,0: NEXT f
 320 FOR f=28 TO 220 STEP 32: PLOT f,12: DRAW 0,160: NEXT f
 330 FOR f=1 TO 2*skill+1 STEP 2: PRINT AT f,29; INK f/2;"▩ "; INK 0;f/2+.5: NE
X
T f
 340 FOR f=13 TO 17: PRINT AT f,29;b$(f-12): NEXT f
 350 PRINT AT 19,29; INVERSE 1;skill
 360 FOR f=1 TO 200: NEXT f
 399 REM  Main loop
 400 FOR n=1 TO 30
 410 GO SUB 2000
 499 REM  Computers loop
 500 FOR g=1 TO n
 510 PRINT AT a(g),b(g); INK c(g);"▩▩▩▩";AT a(g)+1,b(g);"▩▩▩▩";AT a(g)+2,b(g);"▩
▩▩▩
"
 520 BEEP 1-(n/35),c(g)*3+5
 530 NEXT g
 540 FOR f=1 TO 200: NEXT f
 550 GO SUB 2000
 560 FOR f=1 TO 2: FOR h=0 TO 6: PRINT AT 21,3; INK h; PAPER 6-h/2;" Y O U R
G O    N O W ": NEXT h: NEXT f
 699 REM  loop for your go
 700 FOR g=1 TO n
 710 IF INKEY$="" THEN  GO TO 710
 720 GO SUB 1000
 730 PRINT AT a(g),b(g); INK c(g);"▩▩▩▩";AT a(g)+1,b(g);"▩▩▩▩";AT a(g)+2,b(g);"▩
▩▩▩
"
 740 BEEP .5,c(g)*3+5
 750 NEXT g
 760 FOR f=1 TO 200: NEXT f
 900 NEXT n
 999 REM  Computer checks input
1000 PRINT AT 21,3;"                              "
1010 IF PEEK 23560=48+c(g) THEN  RETURN
1020 FOR f=0 TO 7: BORDER f: BEEP .1,30-f*7: BEEP .1,40-f*7: NEXT f
1030 PRINT AT 21,0; INK 2; FLASH 1;"            W R O N G            ": BEEP 5,-4
0
1040 BORDER 5: PAPER 5: CLS : PRINT AT 8,3;"Y O U R   S C O R E   O N";AT 11,5;"
S K I L L   L E V E L";AT 14,9;skill;"   W A S   "; PAPER 6;n-1
1050 PRINT AT 21,3;"P R E S S   A N Y   K E Y."
1060 PAUSE 0: GO TO 10
1999 REM  Clear screen routine
2000 FOR f=1 TO n: PRINT AT a(f),b(f);"   ";AT a(f)+1,b(f);"   ";AT a(f)+2,b(f);
"   ": NEXT f
2010 RETURN
6999 REM  Instructions
7000 BORDER 4: PAPER 4: INK 0: CLS
7010 PRINT "THE IDEA OF THIS GAME IS TO COPY"''"THE SEQUENCE OF COLOURS SHOWN TO
"''"YOU BY THE COMPUTER.THIS IS DONE"''"BY PRESSING THE APPROPRIATE KEYS"''"WHEN
 IT IS YOUR GO."
7020 FOR f=1 TO 600: NEXT f
7030 FOR f=10 TO 21: PRINT AT f,5; PAPER 0;"                          ": NEXT f: REM
(21 spaces)
7040 PRINT AT 11,6; PAPER 0; INK 6;"ZX Spectrum";AT 12,5;"_____________________"
7050 FOR f=2 TO 12 STEP 2: PRINT AT 14,f+4; PAPER f/2; INK 9;f/2: BEEP .5,f*2: N
EXT f
7060 FOR f=18 TO 24 STEP 2: PRINT AT 14,f; PAPER 1;" ": NEXT f
7070 FOR f=7 TO 23 STEP 2: PRINT AT 16,f; PAPER 1;" ";AT 18,f+1;" ";AT 20,f;" ":
 NEXT f
7080 PRINT AT 20,6; PAPER 1;" ";AT 20,24;" "
7090 FOR f=1 TO 5: FOR g=-30 TO 30 STEP 5: BEEP .01,g+f: NEXT g: NEXT f
7100 PRINT AT 12,28;"HIT";AT 14,28;"ANY";AT 16,28;"KEY": PAUSE 0: RETURN
```

SOLID GOLD

Bismark
48K £6.99

APS, No. 1, Golden Square, London W1R 3AB

With weather worsening, you leave behind the wreck of HMS Hood and, with a huge and powerful fleet of battle groups, your aim is to find and destroy the Bismark before she reaches the convoy routes.

Complete instructions appear after the program has loaded, with the game starting at 0600 hours on 24th May — each turn represents six hours. You have 13 turns to find and destroy the battleship before your forces must return home to refuel. Bismark has strength 30 while your total strength is 179.

The search takes place on a grid with ships' positions listed by co-ordinates. Each turn you give movement orders to 12 naval groups — one moves 3, the others 2. Then you'll be told if your groups have sighted the Bismark. In fair and good weather you'll be asked if you wish to fly airstrikes, which, if they locate her, will attack.

Forces in the same area can attack her, and if stronger will win. Bismark fires first and combat can last an unlimited number of rounds, until she is sunk or you quit. A score up to 100 is given at the end. **T.W.**

instructions	80%
playability	75%
graphics	40%
value for money	75%

★ ★ ★ ★

Factory Breakout
48K £5.50

Poppy Soft, The Close, Common, Rd, Headley, Newbury Berks

A fascinating game of skill and speed which exploits all the programmer's skills in graphics, use of colour, sound and animation.

Screen top has score, levels alpha to epsilon and lives left out of three. On screen one Zirky, the robot egg-capsule, is surrounded by the self-destruct micron rays. Only you can rotate him, shooting them with a short range laser until an energy column reaches him from below and transports him to screen two on a conveyor belt. Here Zirky must cross the perilous rejection line — now out of control — where five auto inspectors try to squash him, while a canary flies up to kill him.

He enters the lift room, where green lifts are ready to suck him up to any level he wants. He must visit all six levels, fall through 12 doors, changing their colour to red, then blue — which obliterates them — and evading alien monsters. Zirky can open four force fields on the levels to help him obliterate them.

Zirky then has to discover the factory key to reach the last screen — which is more than I have done! **T.W.**

instructions	100%
playability	100%
graphics	100%
value for money	100%

★ ★ ★ ★ ★

Kosmic Kanga
48K £5.95

Micromania, 14 Lower Hill Road, Epsom, Surrey KT19 8LT

This colourful, multiscreen, arcade standard game kept two young visitors in stitches for a whole evening as they tried to get Kosmic Kanga through 11 screens to his spaceship, to allow him to return to his home planet.

Compatible with AGF, Protek, Kempston and Interface 2 joystick interfaces, this program makes full use of all the potential of the Spectrum. Use of colour and sound is excellent and the animated graphics are superb.

The options screen leads on to the Airport, where Kanga bounces his way over buildings, clouds, bombs, fire engines, birds and aeroplanes, collecting treasure and points as he moves. The last four items are deadly but can be removed by Kanga throwing boxing gloves at them.

He visits the desert, ocean, Atlantis, the beach, country, city and three platform games, before going to the Moon and finally his ship.

You have four lives, shown at screen bottom with your score and top score. Bonus points are added for each screen completed and key response is very good. **T.W.**

instructions	70%
playability	85%
graphics	90%
value for money	90%

★ ★ ★ ★

Sam Safety
48K £7.95

APS, No. 1, Golden Square, London W1R 3AB

In this package from Computertutor, their resident character, Clever Clogs, invites you to learn the rules of road safety whilst playing a sort of maze game.

The maze is a series of interlinked, well illustrated streets with all the features you would expect, cars, crossings, subways and so on. Using the cursor keys, you direct Sam on his journey. You must look left and right, using defined keys to cross safely. Every now and then a prize appears in the street. You must walk Sam up to it and identify a road sign to amass points. Complete the journey and your ZX printer presents you with a certificate!

Perhaps the best feature is the ability to design your own map and name the streets after ones in your locality. This, together with the facility to alter the level of difficulty, makes it easy to tailor the program to the needs and interests of any child.

A well designed and executed program, with interesting graphics and sound, which combines fun and purposeful learning. **D.M.**

instructions	100%
playability	100%
graphics	95%
value for money	90%

★ ★ ★ ★ ★

Automania
48K £6.95

Mikro-Gen, 44 The Broadway, Bracknell, Berks

Sub-titled Manic Mechanic, this is a must for all games players. A musical tune and comic cast list — decorating by Polly Filler and R Tex — introduce this whacky game. In his flat cap, oversize boots and with a beer belly, Wally Week with three lives has to get car parts from a store and build 10 cars.

The menu offers music on/off (thanks!), demo mode, redefine keys and choice of Sinclair and Kempston interfaces. The game starts in the assembly room with tyres rolling round and car parts dropping from overhead conveyor belts.

Assuming Wally jumps the tyres he moves into the store room, climbs ladders to collect the six pieces from various platforms which are none too safe and have gaps requiring jumping. Each new car has its parts coloured differently in a different store room and pieces must be placed in the correct positions on the cars in the assembly room.

Being a wally, tools and oil cans are dropped in his way.

Mikro-Gen will pay £100 for the highest score each month — so invest in this colourful game with superb graphics and animation. **T.W.**

instructions	100%
playability	100%
graphics	100%
value for money	100%

★ ★ ★ ★ ★

Rave reviews greet this cluster of new releases. Will you find the reviewers' enthusiasm catching?